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## PROCEEDINGS

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#### SIX NEW MAMMALS FROM COZUMEL ISLAND, YUCATAN.

BY C. HART MERRIAM.

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Early in April, 1901, E. W. Nelson and E. A. Goldman, while engaged in field work in Yucatan under the auspices of the Biological Survey of the U. S. Department of Agriculture, visited the island of Cozumel and spent two weeks in collecting mammals and birds. During this period they secured 190 specimens of birds and 51 specimens of mammals. The mammals comprise six species, all of which are new. They consist of a Raccoon, a Nasua, an Opossum, a Peccary, a Rice Rat, and a White-footed Mouse. With the single exception of the Opossum, all are strikingly distinct from their nearest relatives on the mainland. This is the more surprising in view of the fact that Cozumel is distant only 10 miles from the adjacent shores of Yucatan. The Opossum, Rice Rat, and Mouse are larger than the nearest related forms on the mainland; the Raccoon, Nasua, and Peccary so much smaller that they may almost be spoken of as pygmies.

The only mammal heard of which was not secured is a small Gray Fox (*Urocyon*) reported by the natives as rather rare, but more common on the eastern and southern parts of the island. From the accounts it agrees with the Raccoon, Nasua, and Peccary in being much smaller than the mainland species.

Mr. Nelson tells me that shortly before his visit a pair of yellow Agoutis were introduced from the adjacent mainland of Yucatan. One of these was seen in the woods near San Miguel by Mr. Goldman.

In 1898 Oldfield Thomas published a list of 5 species of mammals collected on Cozumel by G. F. Gaumer. These are: *Nasua narica* (= *N. nelsoni*), *Didelphis marsupialis* (= *D. cozumelae*), *Nyctinomus gracilis*, *Chilonycteris rubiginosa*, and *Artibeus perspicillatus* (Proc. Zool. Soc. London, 1888, p. 129). No bats were obtained by Nelson and Goldman.

***Nasua nelsoni* sp. nov.**

*Type* from Cozumel Island, Yucatan, No. 108,520, ♂ old, U. S. National Museum, Biological Survey Collection. April 8, 1901, E. W. Nelson and E. A. Goldman. Original No. 14,673.

*Characters*.—Size small; tail short; color very dark seal brown, grizzled anteriorly.

*Color*.—Upperparts, belly, legs, and tail uniform very dark seal brown; head and shoulders grizzled with golden fulvous; sides of neck and outer sides of arms grizzled with buffy whitish; throat soiled buffy; ears and stripe on side of neck behind ears whitish; chin and nose all round grayish; gray on upper side of nose forking and sending a gray stripe upward and backward over each eye; lower eyelid and small spot between eye and ear gray; gray of chin separated from color of throat by a broad dusky transverse band.

*Cranial characters*.—Skull similar in general to that of *N. narica* from eastern Mexico, but only about two-thirds the size of that species; male with a highly developed, strongly arched sagittal crest; female with smoothly rounded braincase without trace of crest; zygomatica and bullæ similar to those of *narica* but very much smaller; teeth much smaller, particularly the first and last upper and lower molars; first upper molar not only relatively and actually smaller, but differing markedly in shape, the inner side being cut away anteriorly and posteriorly so that the inner cusp stands out by itself much more narrowly and prominently; first lower molar very small and narrow; last upper molar variable but always narrowly subtriangular, the crown much narrower antero-posteriorly than in the mainland species.

*Measurements*.—Type specimen (♂ old): total length 795; tail vertebrae 355; hind foot 85. Average of 2 males from type locality: total length 780; tail vertebrae 345; hind foot 83. Average of 4 females from type locality: total length 744; tail vertebrae 328; hind foot 79.

*Skull*.—Type specimen (♂): basal length 95; occipitonasal length 95; palatal length 66; greatest zygomatic breadth 61; length of molar series on alveoli 16.5.

**Procyon pygmæus** sp. nov.

*Type* from Cozumel Island, Yucatan, No. 108,511, ♂ yg-ad., U. S. National Museum, Biological Survey Collection. April 14, 1901, E. W. Nelson and E. A. Goldman. Original No. 14,698.

*Characters*.—Similar in general to *P. hernandezii*, but only about half the size of that animal; chin and throat separated by a strong band of black; tail yellowish with six or seven annulations.

*Color*.—Upperparts grizzled grayish with a yellowish tinge along the middle of the back, and rather uniformly mixed with black hairs; top of head grizzled gray; face marked by usual transverse black bar enclosing the eyes and sending up a short dusky streak to the forehead; the black facial band separated from gray of top of head by a whitish band divided in the median line by dusky; ankles dusky; chin, lips and sides of nose whitish; throat crossed by broad band of dusky; underparts grizzled grayish with a yellowish suffusion; fore feet grayish throughout; hind feet grayish with a brownish suffusion especially on outer side; tail yellowish marked with six or seven dark brown or blackish rings which are faint below and much less black above than in the other species.

*Cranial characters*.—Skull similar in general to that of *hernandezii* but very much smaller; nasals short, expanded and rounded posteriorly; teeth less than half the size of those of *hernandezii*; last upper molar relatively, as well as actually, much narrower; first upper molar relatively smaller so that the middle upper molar is conspicuously larger than the others; premolars above and below more spaced and very much smaller.

*Remarks*.—This pygmy raccoon is by far the most interesting discovery made by Nelson and Goldman on Cozumel Island. While in many respects it is a miniature of its relative of the adjacent mainland, it possesses characters which would distinguish it at a glance, even if of the same size. Among these characters may be mentioned the broad black throat band, the golden yellow tail, the short posteriorly expanded and rounded nasals, and the peculiarities of the teeth.

*Measurements*.—Type specimen (♂ yg-ad): total length 667; tail vertebrae 230; hind foot 90. A ♀ yg-ad: total length 665; tail vertebrae 250; hind foot 97.

*Skull*.—Type specimen (♂ yg-ad): basal length 88; occipitonasal length 88; palatal length (not including spine) 58; zygomatic breadth 59; length of molar series on alveoli 17.

**Didelphis yucatanensis cozumelæ** subsp. nov.

*Type* from Cozumel Island, Yucatan, No. 108,498, ♂ ad., U. S. National Museum, Biological Survey Collection. April 16, 1901, E. W. Nelson and E. A. Goldman. Original No. 14,700.

*Characters*.—Externally similar to *yucatanensis* Allen, but body larger (in 2 ad. ♂s averaging 383, contrasted with 364 in 2 ad. ♂ *yucatanensis*; in 2 ♀s averaging 359 contrasted with 327); tail much shorter (in 2 ♂s averaging 317 contrasted with 354 in 2 ad. ♂ *yucatanensis*; in 2 females averaging 296 contrasted with 370); hind feet same size; skull similar but decidedly larger; *rostrum very much broader; nasals broader and flatter* (especially the anterior ♀); posterior roots of zygomata standing out more squarely; zygomatic arm of squamosal larger and more broadly expanded vertically; palate broader; anterior rudiment of auditory capsule (sphenoid bulla) much smaller and more irregular in form.

*Measurements*.—Type specimen (♂ ad.): total length 703; tail vertebrae 324; hind foot 59. Average of 2 males from type locality: total length 700; tail vertebrae 317; hind foot 59. An ad. ♀ from type locality: total length 670; tail vertebrae 299; hind foot 55. Average of 2 females from type locality: total length 655; tail vertebrae 296; hind foot 55.

#### Tayassu nanus sp. nov.

*Type* from Cozumel Island, Yucatan, No. 108,516, ♂ ad., U. S. National Museum, Biological Survey Collection. April 7, 1901, E. W. Nelson and E. A. Goldman. Original No. 14,664.

*Characters*.—Size small; related to *angulatus* but only about two-thirds as large; color not markedly different from that of *angulatus* except nose and chin which are blacker.

*Color*.—Upperparts finely grizzled black and buffy, with distinct buffy shoulder-stripe (as in *angulatus* and *tajacu*); nose, chin, dorsal stripe (from occiput to tail), ears, and feet, black. The black nose and chin are most conspicuous in the young and are sufficient to distinguish the species from *T. angulatus*.

*Cranial characters*.—Skull short and broad, especially broad posteriorly, with abruptly spreading zygomata and very large bullae. Compared with skulls of *angulatus* from Texas and eastern Mexico, the skull is of nearly the same breadth, but very much shorter, with much more abruptly spreading zygomata (anteriorly), giving a very different physiognomy; relatively larger bullae, and very much smaller molariform teeth, the canines and incisors nearly as large as in *angulatus*. The angle of the jaw is broadly expanded and rounded as in *angulatus*, but differs in having its posterior margin strongly inflexed. In skulls young enough to show the sutures, the nasals are expanded and squarely truncate posteriorly and rather broadly expanded in the middle.

*Measurements*.—Type specimen (♂ ad.): total length 840; tail vertebrae 32; hind foot 178. Average of 3 males from type locality: total length 823; tail vertebrae 30; hind foot 175. An adult ♀ from type locality: total length 780; tail vertebrae 30; hind foot 177. *Skull* of type: basal length 176; basilar length of Hensel 168; palatal length 120; occipitonasal length 189; zygomatic breadth 100; upper molariform series of teeth 52.

***Peromyscus cozumelae* sp. nov.**

*Type* from Cozumel Island, Yucatan, No. 108,449, ♂ ad., U. S. National Museum, Biological Survey Collection. April 11, 1891, E. W. Nelson and E. A. Goldman. Original No. 14,686.

*Characters.*—Size and tail medium; ears rather large, thin; color dull brown or brownish fulvous; general appearance similar to *P. affinis* Allen,\* but slightly larger and somewhat darker and more uniform in color.

*Color.*—Head and upperparts varying from grayish brown to dull fulvous brown; underparts white, the plumbeous underfur showing through; tail indistinctly bicolor, brownish dusky above, pale yellowish or whitish below (nearly naked); ankles and wrists brownish or dusky; fore and hind feet whitish.

*Cranial characters.*—Skull of medium size, with rather spreading zygomatica, strongly set out and angled anteriorly; nasals broad, flattened, ending about on plane of premaxillæ; incisive foramina rather large and open.

*Remarks.*—*Peromyscus cozumelae* appears to have no very close relative. Externally it resembles *P. affinis* Allen, but is darker and has thinner ears and shorter tail. Cranially, however, it differs materially from any species known to me. Compared with *affinis* it may be distinguished by the broader and more squarely elbowed zygomatica, flatter and broader braincase, broader nasals, slightly larger bullæ, and heavier teeth. The incisive foramina show considerable variation. In most specimens they are long and their outer borders are evenly convex. In others they are much more broadly open and the outer border forms an angle at the maxillo-premaxillary suture. In some specimens they are rather short.

*Measurements.*—Type specimen (♂ ad.): total length 180; tail vertebræ 80; hind foot 23. Average of 8 males from type locality: total length 181; tail vertebræ 82; hind foot 23.5.

***Oryzomys cozumelae* sp. nov.**

*Type* from Cozumel Island, Yucatan. No. 108,462, ♂ ad., U. S. National Museum, Biological Survey Collection. April 8, 1901, E. W. Nelson and E. A. Goldman. Original No. 14,666.

*Characters.*—Size large; similar to *O. aquaticus* Allen, but darker; ears and hind feet larger; tail much longer and darker.

*Color.*—Upperparts dark grayish bister with pale fulvous suffusion on sides and rump; in old pelage back (especially rump) rusty red; under-

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\*My *Peromyscus musculoides* (Proc. Biol. Soc. Wash., Vol. XII, p. 124, April 30, 1898) appears to be at most only a subspecies of *P. affinis* Allen, from which it differs in slightly larger size, larger ears and longer rostrum.

parts varying from soiled whitish to pale buffy salmon; ears dark brown, darkest on outer half; tail dusky, paler below.

*Cranial characters.*—Skull large and heavy, with strongly marked superciliary beads, long rostrum, and long incisive foramina. Closely related to *aquaticus*, from which it differs in the following characters: anterior roots of zygomata more depressed and less spreading; orbital angle of frontal less marked; posterior part of braincase broader, carrying the lateral beads *outward posteriorly*, so that they form almost a straight line from side of occiput to angle of orbit; incisive foramina longer and more open.

*Remarks.*—Compared with *aquaticus*, the only species to which it bears any near resemblance, the color in fresh pelage is grayer and darker (less golden fulvous), in worn pelage redder—the rump and hinder part of back more rusty; ears and face darker, the face strongly grizzled with black hairs. The underparts are never buffy yellow as in *aquaticus*.

*Measurements.*—Type specimen ( $\sigma$  ad.): total length 332; tail vertebrae 182; hind foot 35. Average of 5 adults from type locality: total length 315; tail vertebrae 176; hind foot 34.5.